

CLAIMS

What is claimed:

- 5 1. A musical instrument string comprising:
 a string; and
 a polymer cover combined with a low temperature resin covering at least a portion of the string.
- 10 2. The musical instrument string of claim 1, wherein the polymer cover comprises at least some porosity, wherein at least a portion of the porosity is filled with the low temperature resin.
- 15 3. The musical instrument string of claim 1, wherein the low temperature resin comprises at least one material selected from the group consisting of thermoplastic resins that have a Melt Flow Rate of greater than about 1 gram/10 minutes under a test condition temperature of less than about 300°C at a constant weight of about 5 Kg (as determined by ASTM D1238) and thermoset resins.
- 20 4. The musical instrument string of claim 2, wherein the low temperature resin comprises at least one material selected from the group consisting of thermoplastic resins that have a Melt Flow Rate of greater than about 1 gram/10 minutes under a test condition temperature of less than about 300°C at a constant weight of about 5 Kg (as determined by ASTM D1238) and thermoset resins.
- 25 5. The musical instrument string of claim 1, wherein the string includes a core material selected from the group consisting of metal, gut, and synthetic material.
- 30 6. The musical instrument string of claim 5, wherein the core material comprises synthetic material.
- 35 7. The musical instrument string of claim 6, wherein the synthetic material is selected from the group consisting of nylon and polyetheretherketone.

8. The musical instrument string of claim 7, wherein the synthetic material comprises polyetheretherketone.
9. The musical instrument string of claim 1, wherein the string is a wound string.
10. The musical instrument string of claim 6, wherein the string is a wound string.
- 10 11. The musical instrument string of claim 1, wherein the resin is UV-cured.
12. The musical instrument string of claim 2, wherein the resin is UV-cured.
13. The musical instrument string of claim 10, wherein resin is UV-cured.
- 15 14. The musical instrument string of claim 1, wherein the polymer cover comprises fluoropolymer.
- 15 15. The musical instrument string of claim 2, wherein the polymer cover comprises fluoropolymer.
- 20 16. The musical instrument string of claim 2, wherein the low-temperature resin substantially fills the porosity of the polymer cover.
- 25 17. The musical instrument string of claim 15, wherein the low temperature resin substantially fills the porosity of the fluoropolymer cover.
- 30 18. The musical instrument string of claim 14, wherein the fluoropolymer comprises at least a material selected from the group consisting of polytetrafluoroethylene, fluorinated ethylene propylene, and perfluoro alkoxy resin.
19. The musical instrument string of claim 15, wherein the fluoropolymer is expanded polytetrafluoroethylene.
- 35 20. The musical instrument string of claim 19, wherein the low temperature resin substantially fills the porosity of the cover.

21. The musical instrument string of claim 12, wherein the UV-cured resin fills substantially all of the porosity of the polymer cover.
22. The musical instrument string of claim 2, wherein the low-temperature resin is also provided to at least one surface of the polymer cover.
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23. The musical instrument string of claim 22, wherein the low-temperature resin is provided to the at least one surface of the cover as a discontinuous layer.
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24. The musical instrument string of claim 22, wherein the low-temperature resin is provided to the at least one surface of the cover as a continuous layer.
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25. The musical instrument string of claim 21, wherein the UV-cured resin is also provided to at least one surface of the polymer cover.
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26. The musical instrument string of claim 25, wherein the UV-cured resin is provided to the at least one surface of the polymer cover as a discontinuous layer.
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27. The musical instrument string of claim 25, wherein the UV-cured resin is provided to the at least one surface of the polymer cover as a continuous layer.
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28. The musical instrument string of claim 17, wherein the resin is UV-cured.
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29. The musical instrument string of claim 1, wherein the low temperature resin further comprises at least one filler material.
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30. The musical instrument string of claim 2, wherein the low temperature resin further comprises at least one filler material.
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31. The musical instrument string of claim 29, wherein the at least one filler material comprises at least a material selected from the group consisting of ceramics, metals, metal coated fillers, metallized fillers, carbon, and polymers.

32. The musical instrument string of claim 30, wherein the at least one filler material comprises at least a material selected from the group consisting of ceramics, metals, metal coated fillers, metallized fillers, carbon, and polymers.
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33. The musical instrument string of claim 11, wherein the UV-cured resin comprises at least a material selected from the group consisting of urethane acrylates and cationic epoxies.
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34. The musical instrument string of claim 12, wherein the UV-cured resin comprises at least a material selected from the group consisting of urethane acrylates and cationic epoxies.
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35. A classical guitar string comprising:
a string; and
a polymer cover combined with a low temperature resin covering at least a portion of the string.
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36. The classical guitar string of claim 35, wherein the polymer cover comprises at least some porosity, wherein at least a portion of the porosity is filled with the low temperature resin.
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37. The classical guitar string of claim 35, wherein the string comprises a wound string.
38. The classical guitar string of claim 35, wherein the low temperature resin is UV-cured.
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39. The classical guitar string of claim 36, wherein the low temperature resin is UV-cured.
40. The classical guitar string of claim 35, wherein the polymer cover comprises fluoropolymer.
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41. The classical guitar string of claim 36, wherein the polymer cover comprises expanded polytetrafluoroethylene.

42. The classical guitar string of claim 41, wherein the low temperature resin substantially fills the porosity of the expanded polytetrafluoroethylene.
43. The classical guitar string of claim 40, wherein the fluoropolymer comprises at least a material selected from the group consisting of polytetrafluoroethylene, fluorinated ethylene propylene, and perfluoro alkoxy resin.
44. The classical guitar string of claim 35, wherein the low temperature resin comprises thermoplastic resin that has a Melt Flow Rate of greater than about 1 gram/10 minutes under a test condition temperature of less than about 300°C at a constant weight of about 5 Kg (as determined by ASTM D1238).
45. The classical guitar string of claim 36, wherein the low temperature resin comprises thermoplastic resin that has a Melt Flow Rate of greater than about 1 gram/10 minutes under a test condition temperature of less than about 300°C at a constant weight of about 5 Kg (as determined by ASTM D1238).
46. The classical guitar string of claim 35, wherein the low temperature resin comprises thermoset resin.
47. The classical guitar string of claim 36, wherein the low temperature resin comprises thermoset resin
48. The classical guitar string of claim 36, wherein the low temperature resin fills substantially all of the porosity of the polymer cover.
49. The classical guitar string of claim 36, wherein the low temperature resin is also provided to at least one surface of the cover.
50. The classical guitar string of claim 49, wherein the low temperature resin is provided to the at least one surface of the cover as a discontinuous layer.

51. The classical guitar string of claim 49, wherein the low temperature resin is provided to the at least one surface of the cover as a continuous layer.
- 5 52. The classical guitar string of claim 41, wherein the low temperature resin fills substantially all of the porosity of the polymer cover.
53. The classical guitar string of claim 52, wherein the low temperature resin is also provided to at least one surface of the polymer cover.
- 10 54. The classical guitar string of claim 53, wherein the low temperature resin is provided to the at least one surface of the polymer cover as a discontinuous layer.
- 15 55. The classical guitar string of claim 53, wherein the low temperature resin is provided to the at least one surface of the polymer cover as a continuous layer.
- 20 56. The classical guitar string of claim 35, wherein the resin further comprises at least one filler material.
57. The classical guitar string of claim 36, wherein the resin further comprises at least one filler material.
- 25 58. The classical guitar string of claim 56, wherein the at least one filler material comprises at least a material selected from the group consisting of ceramics, metals, metal coated fillers, metallized fillers, carbon, and polymers.
- 30 59. The classical guitar string of claim 57, wherein the at least one filler material comprises at least a material selected from the group consisting of ceramics, metals, metal coated fillers, metallized fillers, carbon, and polymers.
- 35 60. The classical guitar string of claim 38, wherein the UV-cured resin comprises at least a material selected from the group consisting of urethane acrylates and cationic epoxies.

61. The classical guitar string of claim 39, wherein the UV-cured resin comprises at least a material selected from the group consisting of urethane acrylates and cationic epoxies.
- 5 62. A plastic material comprising:
 a film of porous fluoropolymer having top and bottom surfaces;
 and UV-cured resin applied to at least a portion of the film.
- 10 63. The plastic material of claim 62, wherein the UV-cured resin fills at least some of the porosity of the film.
- 15 64. The plastic material of claim 62, wherein the UV-cured resin fills substantially all of the porosity of the film.
- 20 65. The plastic material of claim 62, wherein the porous fluoropolymer film comprises polytetrafluoroethylene.
66. The plastic material of claim 62, wherein the porous fluoropolymer film comprises fluorinated ethylene propylene.
- 25 67. The plastic material of claim 62, wherein the UV-cured resin comprises at least a material selected from the group consisting of urethane acrylates and cationic epoxies.
68. The plastic material of claim 62, wherein the UV-cured resin is applied discontinuously across at least one of the at least one top and bottom surfaces of the film.
- 30 69. The plastic material of claim 62, wherein the UV-cured resin is applied continuously across at least one of the at least one top and bottom surfaces of the film.
70. The plastic material of claim 62, wherein the UV-cured resin further comprises at least one filler material.
- 35 71. The plastic material of claim 69, wherein the at least one filler material comprises at least a material selected from the group consisting of

ceramics, metals, metal coated fillers, metallized fillers, carbon, and polymers.

72. A musical instrument string comprising:

5 a wound string; and

 a polymer cover surrounding at least a portion of the wound string, the cover being attached to the wound string through use of a UV-cured adhesive.

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73. A guitar string comprising:

 a wound string having at least one polymer component; and

 a polymer cover attached to the wound string by a low-temperature resin.

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